

Endangered Species Act - Section 7  
Consultation

BIOLOGICAL OPINION

Austin Junction - Baker County Line Section  
US Highway 26  
Grant County

Agency: Federal Highway Administration

Consultation Conducted By: National Marine Fisheries Service,  
Northwest Region

Date Issued: April 26, 2000

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## I. BACKGROUND

On March 9, 2000, the National Marine Fisheries Service (NMFS) received a Biological Assessment (BA) and request from the Federal Highway Administration (FHWA) for Endangered Species Act (ESA) section 7 formal consultation for a road modernization project on US-26 from Austin Junction (MP 190.76) to the Baker County Line (MP 200.3) in Grant County, Oregon. The FHWA is funding the proposed repair, and is the lead agency for the project. Oregon Department of Transportation (ODOT) has designed the project and will administer the construction contract. This Biological Opinion (Opinion) is based on the information presented in the BA and the result of the consultation process.

The FHWA/ODOT has determined that the Middle Columbia River (MCR) steelhead (*Oncorhynchus mykiss*) may occur within the project area. The MCR steelhead was listed under the ESA on March 25, 1999 (64 FR 14517). The proposed project is within MCR steelhead critical habitat, which was designated February 16, 2000 (65 FR 7764).

The FWHA/ODOT is proposing to replace culverts at Clear Creek, Dry Fork Clear Creek, Phipps Creek, and Squaw Creek, all tributaries to the Middle Fork John Day River. The project also includes widening and re-surfacing the highway for the entire project length, realignment of the highway at Squaw Creek, and raising the highway elevation at Clear Creek. Project construction is proposed to begin during summer 2000, and is expected to be completed in 2001.

The effects determination was made using the methods described in *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). The FWHA/ODOT determined that the proposed action was likely to adversely affect the MCR steelhead.

This Opinion reflects the results of the consultation process. The consultation process involved a site visit and meetings in the fall of 1999, and correspondence and communications to obtain additional information and clarify the BA. As appropriate, modifications to the proposal to reduce impacts to the indicated species were discussed and incorporated into the proposed action. This included changing the alignment of the highway to avoid stream channel changes and minimize impacts to stream, adding mitigation to the project, and altering the design and placement of culverts to improve fish passage.

The objective of this Opinion is to determine whether the action to re-construct US-26 in eastern Grant County is likely to jeopardize the continued existence of the MCR steelhead or destroy or adversely modify its critical habitat.

## II. PROPOSED ACTION

The FHWA/ODOT proposes to widen and re-surface the highway for the entire project length, realign the highway at Squaw Creek, raise the highway elevation at Clear Creek, increase snow storage capacity, open adjacent roadside slopes to reduce winter shading, and replace culverts at Clear Creek, Dry Fork Clear Creek, Phipps Meadow, and Squaw Creek. In addition, fencing would be constructed to exclude livestock from the roadway, guardrail would be installed or upgraded, and clear zones would be improved.

### Clear Creek

The existing 65 foot- long diameter culvert at Clear Creek will be replaced with a reinforced concrete box culvert (RCBC). The new RCBC will be 57 feet long, 12 feet wide, and 10 feet high, with wing walls and aprons. It will be countersunk 2 feet, and seeded with 16 angular rocks (2 ft diameter) to catch bedload and provide a natural bottom substrate. The alignment of the highway will be raised 10 feet where the highway crosses Clear Creek to level out a dip in the highway. A stone embankment will be constructed on both sides of the road to support steeper sideslopes, with the goal of minimizing impacts to the streams. This will require the removal of some riparian vegetation.

The existing culvert at Clear Creek will be de-watered prior to its removal using an Oregon Department of Fish and Wildlife (ODFW)-approved method that includes fish exclusion. Fish passage at Clear Creek will be maintained through a 26-inch diameter bypass pipe. The flow from Clear Creek is expected to use the bypass system for two to four weeks during the ODFW in-water work window (July 15 to August 15), plus an approved 2 week extension from July 1 to July 14. Once flow is reverted to the new culvert, the bypass pipe will be filled with concrete and abandoned. Sedimats will be used in the flowing stream immediately below the work site to contain sediment.

### Dry Fork Clear Creek

To the east of the Clear Creek culvert, the alignment of the highway will be shifted 16 feet to the south to keep the fillslope away from the Dry Fork Clear Creek channel along the north side of the highway, and to keep the toe of the fill slope out of the confluence of Clear Creek with Dry Fork Clear Creek.

The Dry Fork Clear Creek culvert and a second culvert under a U.S. Forest Service road will be replaced with a single 76-foot long RCBC that is 12 feet wide and 10 feet high, with wing walls and aprons. The culvert box will be countersunk 4 feet and seeded with 26 angular rocks to catch gravel bedload. The existing culvert will be used to provide fish passage during excavation of the new culvert, and will remain in place after project completion to provide ditch drainage from the east. Currently, the creek turns a right angle as it exits the first culvert and enters the second. The 70 feet of stream between the two culverts, which provides poor aquatic habitat with no shade-producing riparian vegetation, will be removed.

Widening the road at Dry Fork Clear Creek will require extending the road fill approximately 11 feet

upstream beyond the inlet of the existing culvert. Class 100 riprap will be added to the north bank of Dry Fork Clear Creek starting from the wingwall of the outlet and extending 43 feet downstream along the north bank. The riprap is necessary to prevent unacceptable erosion of the bank. A 3.3-foot deep and 43 feet long toe trench will be excavated in the channel, and a 2-foot thick blanket of riprap will extend from the toe trench up to the top of the bank. Streambed material will be backfilled over the top of the riprap in the toe trench. Dry Fork Clear Creek will be diverted past the work area during the excavation and placement of riprap, which is expected to take one day. Diversion of the creek will be accomplished using an ODFW-approved method (damming and pumping); the method is described in the Terms and Conditions of this Opinion.

### Phipps Creek

Two adjacent 38-foot long RCBCs at Phipps Creek will be replaced with one 42-foot long RCBC that is 10 feet wide and 6 feet high. It will be placed along the same alignment as the existing culverts and countersunk 2 feet. The new culvert bottom will be seeded with 12 angular rocks. The replacement of this culvert will be done after the stream goes dry in August. The FHWA/ODOT has received a variance from ODFW to work outside the designated work window (July 15 to August 15) so they can work when there is no surface flow. The toe of slope at this location would be wider than it is currently because of the proposed road widening. The slopes would extend upstream approximately 11 feet beyond the existing inlet, and downstream approximately 10 beyond the existing outlet. Wing walls will minimize the encroachment of fill into the stream.

### Squaw Creek

At this location, the highway will be realigned 10 feet to the south to avoid adverse modification to the channel and streambank of Squaw Creek. This shift in the alignment will require the purchase of an 11-acre parcel of the south side of the highway. The two existing culverts at Squaw Creek will be replaced with one 55-foot long RCBC, that is 10 feet wide and 10 feet high. It will be countersunk 2 feet, and seeded with 16 angular rocks and gravel. A stone embankment will be constructed to minimize the width of the fill and impact to Squaw Creek.

At this culvert, a temporary detour, required to pass traffic during construction, will be constructed on the upstream side of the existing culverts. The temporary fill required to construct the detour will cover approximately 864 square yards. The fill material will be placed on geotextile fabric, and be removed after the new culvert is installed and the highway is re-constructed. The geotextile makes removal of the fill easier, and lessens the impact to the creek bed and vegetation. Short-term seeding and re-planting will be done following the removal of the detour.

The existing culverts at Squaw Creek will be de-watered prior to their removal using an ODFW-approved methods that includes fish exclusion. Fish passage will be maintained through 142-foot long, 36-inch diameter bypass pipe placed on the east side of the existing culverts. Duration of de-watering is expected to be from two to four weeks.

### **III. BIOLOGICAL INFORMATION AND CRITICAL HABITAT**

The MCR steelhead Evolutionarily Significant Unit (ESU) was listed as threatened under the ESA by the NMFS on March 25, 1999 (64 FR 14517). Biological information concerning the MCR steelhead is found in Busby et al. (1995, 1996). Critical habitat was designated for the MCR steelhead on February 16, 2000 (65 FR 7764). Critical habitat for MCR steelhead includes the major Columbia River tributaries known to support this ESU including the Deschutes, John Day, Klickitat, Umatilla, Walla Walla, and Yakima Rivers, as well as the Columbia River and estuary. The adjacent riparian zone is included in this designation. The riparian zone is defined as the area that provides the following functions: Shade, sediment, nutrient or chemical regulation, streambank stability, input of large woody debris or organic matter, and others.

### **IV. EVALUATING PROPOSED ACTIONS**

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the initial steps of: (1) Defining the biological requirements and current status of the listed species; and (2) evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action; (2) the environmental baseline; and (3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmonid's life stages that occur beyond the action area. If NMFS finds that the action is likely to jeopardize, NMFS must identify reasonable and prudent alternatives for the action.

Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' designated critical habitat. The NMFS must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. The NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. The NMFS then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery. If NMFS concludes that the action will destroy or adversely modify critical habitat it must identify any reasonable and prudent alternatives available.

For the proposed action, NMFS' jeopardy analysis considers direct or indirect mortality of fish attributable to the action. NMFS' critical habitat analysis considers the extent to which the proposed action impairs the function of essential elements necessary for juvenile and adult migration, spawning, and rearing of the MCR steelhead under the existing environmental baseline.

## **A. Biological Requirements**

The first step in the methods the NMFS uses for applying the ESA section 7(a)(2) to listed steelhead is to define the species' biological requirements that are most relevant to each consultation. NMFS also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NMFS starts with the determinations made in its decision to list MCR steelhead for ESA protection and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for MCR steelhead to survive and recover to naturally reproducing population levels at which protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful adult and juvenile migration, spawning and rearing. The current status of the MCR steelhead, based upon their risk of extinction, has not significantly improved since the species was listed. The serious declines in abundance in the John Day River Basin are especially troublesome, because the John Day River once supported the largest populations of naturally spawning summer steelhead in the MCR ESU. The general pattern in abundance for these populations was a low point during the late 1970s followed by an increasing trend leading to peak counts during the late 1980s. In recent years, all populations have declined to lows that are similar to counts observed in the late 1970s.

## **B. Environmental Baseline**

The current range-wide status of the identified ESU may be found in Busby et al. (1995, 1996). The identified action will occur within the range of MCR steelhead. The defined action area is the area that is directly and indirectly affected by the proposed action. The direct effects occur at the project site and may extend upstream or downstream based on the potential for impairing fish passage, hydraulics, sediment and pollutant discharge, and the extent of riparian habitat modifications. Indirect affects may occur throughout the watershed, where actions described in this opinion lead to additional activities, or affect ecological functions, contributing to stream degradation. As such, the action area for the proposed activities include the immediate portions of the watershed containing the project and those areas upstream and downstream that may reasonably be affected, temporarily or in the long term. For

the purposes of this Opinion, the action area is defined as the streambed and riparian habitat of Clear Creek, Dry Fork Clear Creek, Phipps Creek, and Squaw Creek. The action area extends 500 feet upstream of the highway for each of these streams, and downstream to their confluence with the Middle Fork John Day River. Other areas of the John Day River watershed are not expected to be directly or indirectly impacted.

Steelhead occur in the upper Middle Fork John Day River and its tributaries, including Squaw Creek, Clear Creek, Phipps Creek, and Dry Fork Clear Creek. Steelhead have been observed in Clear Creek and Dry Fork Clear Creek near the US-26 culverts during the summer in-water work window. Steelhead are known to occur in Phipps Creek during the winter. However, they are unlikely to be present during the inwater work period (July 15 to August 15) because the stream has very low flows at this time of year and there are no holding pools near the culvert. Also, water temperatures are very high by July, and the creek usually dries up in August.

Steelhead use most of the moderately sized tributaries on the upper Middle Fork John Day River for both spawning and rearing. Almost the entire watershed (94%) is dominated by coniferous forest landtype except for shrublands, rocky areas, and open moist and wet grass or sedge meadows along some of the creeks and isolated meadows. The Clear Creek, Dry Fork Clear Creek, Phipps Meadow, and Squaw Creek drainages account for 55% of the Upper Middle Fork watershed. The upper Middle Fork John Day River lies mostly on the Malheur National Forest (MNF), with 3% of the watershed privately owned. Land uses of the Middle Fork John Day watershed are greatly influenced by the Malheur Forest Plan, which includes grazing, timber harvest, road maintenance, recreation, irrigation diversion, fire management, and mining. The areas along the lower reaches of Clear Creek have probably been grazed for 100 years. The upper reaches and higher elevation uplands have been minimally used by livestock because of difficult access due to steep slopes and heavy down wood in the riparian zones. Overall, the riparian area along Clear Creek and its tributaries show little impacts of livestock grazing and are considered to be improving. Only a few small meadows have seen heavy livestock use. A small number of private dwellings are located near the communities of Austin, Bates and Austin Junction.

Squaw Creek and Dry Fork Clear Creek, from the mouth to headwaters, are on Oregon Department of Environmental Quality's (ODEQ) list of water quality limited segments (Clean Water Act §303(d)) for summer rearing temperatures. Clear Creek is listed as water quality limited for bull trout summer temperatures. The Middle Fork John Day River is listed as water quality limited for flow modification and summer rearing temperatures from its mouth to Crawford Creek, which encompasses the confluence of Clear Creek. Water quality and fish habitat have been impacted due to past and ongoing land use practices. Major fish habitat constraints are streambank degradation, high water temperatures, poor instream cover, and insufficient riparian vegetation. The lower portions of these creeks have a greater degree of habitat degradation than the higher elevation portions of the watershed.

StreamNet smolt density model data for the mainstem Middle Fork John Day River indicate that the



reaches within the Project analysis area provide fair spawning and rearing habitat for steelhead. Major habitat constraints identified for these reaches include; streambank degradation, high water temperatures, poor instream cover, and inter-specific competition. Grazing, logging and road building within riparian areas have introduced sediment into streams, removed shade/canopy, and resulted in decreased water quality. Riparian plant communities have changed, resulting in a reduction in shade and large wood contributed to the channel.

Based on the data available, it is believed that the adverse effects of grazing and logging on stream and riparian systems have reduced the carrying capacities of streams for salmonids. As a result, many habitat restoration projects have been, and are being implemented as part of a long-term plan to restore anadromous salmonids to the John Day River basin. Major restoration initiatives planned in 1999 include screening of irrigation diversions, replanting of riparian areas to increase shade and reduce water temperatures, reduction of high road densities, treatment of forest insect and disease problems, and fencing livestock grazing areas.

Based on the best available information on the current status of MCR steelhead range-wide; the population status, trends, and genetics; and the poor environmental baseline conditions within the action area (as described in the BA), NMFS concludes that the biological requirements of the identified ESU within the action area are not currently being met. Numbers of MCR steelhead are substantially below historic numbers. Long-term trends are decreasing. All compounded by recent droughts and a change in ocean productivity that probably reduced run sizes, and are probably contributing to the decline in numbers. Degraded freshwater habitat conditions have also contributed to the decline. Use of the NMFS Matrix of Pathways and Indicators (NMFS 1996) identified the following habitat indicators as either at risk or not properly functioning within the action area: summer water temperatures, turbidity/sediment, physical barriers, large woody debris, pool frequency and quality, off-channel habitat, refugia, floodplain connectivity, drainage network increase, road density and location, and riparian reserves. Actions that do not maintain or restore properly functioning aquatic habitat conditions have the potential to jeopardize the continued existence of MCR steelhead.

## **V. ANALYSIS OF EFFECTS**

### **A. Effects of Proposed Action**

The effects determination in this Opinion was made using a method for evaluating current aquatic conditions, the environmental baseline, and predicting effects of actions on them. This process is described in the document, *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996). The effects of proposed actions are expressed in terms of the expected effect (restore, maintain, or degrade) on aquatic habitat factors in the project area.

The proposed action has the potential to cause the following impacts to threatened MCR steelhead or designated critical habitat:

1. In-water work will be needed to replace the culverts. There will be a long-term benefit in replacing the culvert at Clear Creek; this action will restore passage for all age classes of steelhead. Clear Creek currently impedes passage to juveniles at high flows. The action will also improve passage at Dry Fork Clear Creek, Phipps Creek, and Squaw Creek. The new culverts will have simulated stream bottoms, which will make fish movement through the culvert easier at all flows.
2. The in-water work may cause direct and indirect mortality to rearing steelhead in Clear Creek, Dry Fork Clear Creek, and Squaw Creek. Fish will need to be moved out of the work area. This will be done by experienced ODFW biologists, but will still have a risk of mortality. Methods described below will lower the risk to steelhead. No mortality is expected during the in-water work at Phipps Creek because the stream will likely be dry when the work is done, and steelhead are precluded from this reach during late July and August because of low (no) flow and high temperatures.
3. The in-water work (excavation for new culverts, removal of old culverts) has the potential to increase turbidity in the streams. Larger juvenile and adult salmon appear to be less affected by ephemerally high concentrations of suspended sediments that occur during most storms and episodes of snow melt than younger fish. However, other research demonstrates that feeding and territorial behavior can be disrupted by short-term exposure to turbid water. Localized increases of turbidity during in-water work will likely displace steelhead in the project area and disrupt normal behavior. The effects are expected to be temporary and localized.
4. The placement of riprap will displace natural riverbed substrate, and remove the existing riparian habitat. The placement of the excavated riverbed materials on top of the riprap will help ameliorate this part of this impact.
5. Native shrubs and trees will be planted along the stream banks at Clear Creek, Dry Fork Clear Creek, and Squaw Creek. This will enhance riparian cover, increase the shading of the creek, and help maintain cool water temperatures. The plantings will also improve bank stability and reduce surface erosion into the creeks. Fence exclosures (to exclude cattle) around riparian areas currently being grazed by livestock will result in significant benefit over time for fish habitat as riparian systems are restored.
6. Road widening will result in longer culverts and a loss of stream habitat. At Dry Fork Clear Creek, the culvert replacement will improve passage. Currently, the creek goes through the culvert on US Highway 26 and then turns a right angle, only to pass through another culvert under a U.S. Forest Service road. This action will replace both of these culverts with one culvert placed at an angle. This will result in loss of about 70 feet of channel, most at the elbow between the two culverts. Pool habitat at the elbow is used by fish despite high temperatures and a complete lack of riparian vegetation.
7. Riparian vegetation removal will cause short-term bank instability, and some loss of riparian function (shade, secondary production, nutrient regulation, etc.) over the short term. In all cases, riparian vegetation quality is presently low and provides no shade to the stream, although

- it does provide bank stability and some nutrient regulation.
8. Staging activities during construction may result in a spill of hazardous materials. In addition, operation of machinery within and near the creeks will increase the risk of a hazardous spill in the creeks.

The effects of these activities on MCR steelhead and aquatic habitat factors will be limited by implementing construction methods and approaches are included in project design that and are intended to avoid or minimize impacts. These include:

1. All in-water work will be conducted during the ODFW in-water work period of July 15<sup>th</sup> to August 15<sup>th</sup>, plus a two-week extension in July (July 1-14). This will avoid impacts to migrating adult steelhead. The FHWA/ODOT has requested an in-water work period extension for Phipps Creek, so that all in-water work at that site can be done in the dry in August.
2. The erosion control measures identified in the project design will minimize the amount of sediment entrained in the creeks during the in-water construction period. Sedimats will be used to trap entrained sediment. Sediment-laden water from work areas will be pumped to an upland area where it will be filtered through a silt fence, bioswale, or settling basin designed to filter sediment out of the water before the water returns back to the river. An erosion control plan will be implemented that includes Sedimats, silt fences, sediment filters and routine monitoring. Proper implementation of erosion and sediment controls should be adequate to minimize sediment inputs into the river until vegetation regrowth occurs. All sediment containment devices and erosion control devices will be inspected daily during the construction period to ensure that the devices are properly functioning.
3. The work site will be isolated during in-water work and fish passage will be provided during construction. The existing culvert will be isolated with sand bag dams above and below the culvert. Any fish present in the area to be de-watered will be moved above the dams under the supervision of ODFW. Fish passage will be maintained through a bypass pipe. Stream water will be stopped by the dam, flow will pass through the bypass culvert, and be released downstream of the work area. The culvert and adjacent work areas are expected to be de-watered for 2 to 4 weeks during the approved in-water work period.
4. All vegetation removed will be replaced at a 1.5:1 ratio (minimum) with native plant species. Riparian areas along Clear Creek, Dry Fork Clear Creek, Phipps Creek, and Squaw Creek within the action area will be planted. Planting of all shrubs and trees will be done by the MNF. The FHWA/ODOT will provide project funds to the MNF to take cuttings, grow stock, plant, monitor, and maintain all trees and shrubs planted. Cuttings from the sites will be taken and rooted in the year 2000 for planting following the second season of construction. The FHWA/ODOT has prepared the drawings for the location of plantings. The net effect of the action is an improved riparian area over the long term.
5. Hazardous materials, including fuel, will not be stored or transferred within 165 feet of the two-year floodplain of any waterbody. No staging areas or parking areas will occur within 165 feet of the two-year floodplain. This will reduce the likelihood of a spilled toxic substance reaching the river. Spill containment booms will be maintained on-site at all times during construction

operations and/or staging of equipment or fueling supplies. Fueling trucks will maintain a spill containment boom at all times.

6. Any equipment that is to come in contact with the flowing channel will be inspected daily for leaks prior to entering the flowing stream. External oil, grease, and mud will be removed from equipment using steam cleaning, and this will be done at least 165 feet away from the two-year floodplain. The equipment will be inspected by the project inspector prior to each entry into the flowing stream. Untreated wash and rinse water must be adequately treated prior to discharge into the stream.
7. Excavated and stored materials will be staged in stable upland sites. All applicable erosion control standards will be required during stockpiling of materials.

The action also includes habitat restoration activities to mitigate for the in-water work and impacts to riparian habitat and water quality. More riparian plantings are proposed than necessary to replace existing riparian vegetation, and will result in a net improvement in riparian function. Mitigation also includes building fence exclosures around riparian areas currently being grazed by livestock, which would result in significant benefit over time for salmonid habitat as riparian vegetation systems are restored. Potential adverse modification of channel and streambank habitat in Squaw Creek will be avoided through the acquisition of an 11- acre parcel of the south side of the highway. Acquisition of this parcel will allow the alignment of the highway to be shifted south, 10 feet away from Squaw Creek. This parcel is being purchased for the exclusive purpose of avoiding adverse impacts to Squaw Creek, which would have included substantial impact to the channel. Riparian areas within this parcel will be planted. In addition, FHWA/ODOT is funding fencing and planting at three existing wet meadow aspen stands on MNF lands. Also, Noxage Meadows (wetland) will be fenced and enhanced. While both sites are outside of the action area, they will have some benefit to steelhead through the improvement of water quality and hydrology in the upper Middle Fork John Day River watershed.

For the proposed action, the NMFS expects that the effects of the proposed project will tend to maintain each of the habitat elements over the long term, greater than two years. However, in the short term, a temporary increase in sediment entrainment and turbidity, and disturbance of riparian and in-stream habitat is expected. Fish may be killed or temporarily displaced during the in-water work (installation of the new culverts). The potential net effect from the proposed action, including proposed plantings, is expected to be the maintenance and restoration of functional steelhead habitat conditions.

## **B. Effects on Critical Habitat**

NMFS designates critical habitat based on physical and biological features that are essential to the listed species. Essential features for designated critical habitat include substrate, water quality, water quantity, water temperature, food, riparian vegetation, access, water velocity, space and safe passage. Critical habitat for MCR steelhead consists of all waterways below naturally impassable barriers including the project area. The adjacent riparian zone is also included in the designation. This zone is defined as the area that provides the following functions: Shade, sediment, nutrient or chemical

regulation, streambank stability, input of large woody debris or organic matter, and others.

The proposed actions will affect critical habitat. In the short term, a temporary increase of sediments and turbidity and disturbance of riparian and in-stream habitat is expected. In the long term, a net loss of habitat will occur where the culverts are extended. However, there will be a net improvement to riparian habitat because of the fencing to exclude livestock and the plantings. Consequently, NMFS does not expect that the net effect of this action will diminish the long-term value of the habitat for survival of MCR steelhead.

### **C. Cumulative Effects**

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The action area is defined as the streambed and riparian habitat of Clear Creek, Dry Fork Clear Creek, Phipps Creek, and Squaw Creek. The action area extends 500 feet upstream of the highway for each of these streams, and downstream to their confluence with the Middle Fork John Day River. A wide variety of actions occur within the watersheds defined within the Opinion. NMFS is not aware of any significant change in non-Federal activities that are reasonably certain to occur within the action area. NMFS assumes that future private and State actions will continue at similar intensities as in recent years. Future FHWA/ODOT transportation projects are planned in the John Day River watershed. Each of these projects will be reviewed through separate section 7 consultations and are not considered cumulative effects.

## **VI. CONCLUSION**

NMFS has determined based on the available information, that the proposed action is expected to maintain properly functioning stream habitat conditions within the action area over the long term. As such, the proposed action covered in this Opinion is not likely to jeopardize the continued existence of MCR steelhead. NMFS used the best available scientific and commercial data to apply its jeopardy analysis, when analyzing the effects of the proposed action on the biological requirements of the species relative to the environmental baseline, together with cumulative effects. NMFS applied its evaluation methodology (NMFS 1996) to the proposed action and found that it would cause minor, short-term adverse degradation of anadromous salmonid habitat due to sediment impacts, in-water construction, and habitat loss. These effects will be mitigated over the long-term through the implementation of proposed plantings and improved fish passage at the culverts. Direct mortality of juvenile steelhead may occur during the in-water work period of project activities.

## **VII. REINITIATION OF CONSULTATION**

Consultation must be reinitiated if: The amount or extent of taking specified in the Incidental Take Statement is exceeded, or is expected to be exceeded; new information reveals effects of the action may affect listed species in a way not previously considered; the action is modified in a way that causes an effect on listed species that was not previously considered; or, a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16). To re-initiate consultation, ODOT must contact the Habitat Conservation Division (Oregon Branch Office) of NMFS.

## **VIII. REFERENCES**

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this opinion.

- Busby, P., S. Grabowski, R. Iwamoto, C. Mahnken, G. Matthews, M. Schiewe, T. Wainwright, R. Waples, J. Williams, C. Wingert, and R. Reisenbichler. 1995. Review of the status of steelhead (*Oncorhynchus mykiss*) from Washington, Idaho, Oregon, and California under the U.S. Endangered Species Act. 102 p. plus 3 appendices.
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- DEQ 1996. 303d List of Water Quality Limited Streams, as Required Under the Clean Water Act. Oregon Department of Environmental Quality (DEQ), Portland, Or. 1996. ([www.deq.state.or.us/wq/303dlist/303dpage.htm](http://www.deq.state.or.us/wq/303dlist/303dpage.htm)).
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## **IX. INCIDENTAL TAKE STATEMENT**

Sections 4 (d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

#### **A. Amount or Extent of the Take**

The NMFS anticipates that the action covered by this Opinion has more than a negligible likelihood of resulting in incidental take of MCR steelhead because of detrimental effects from increased sediment levels (non-lethal) and the potential for direct incidental take during in-water work (lethal and non-lethal). Effects of actions such as these are largely unquantifiable in the short term, and are not expected to be measurable as long-term effects on steelhead habitat or population levels. Therefore, even though NMFS expects some low level incidental take to occur due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the species itself. In instances such as these, the NMFS designates the expected level of take as "unquantifiable." Based on the information in the biological assessment, NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the actions covered by this Opinion. The extent of the take is limited to within the area of project disturbance, extending 100 feet downstream and 50 feet upstream of the area of disturbance around the culverts.

#### **B. Reasonable and Prudent Measures**

The NMFS believes that the following reasonable and prudent measures are necessary and appropriate to minimizing take of the above species. Minimizing the amount and extent of take is essential to avoid jeopardy to the listed species.

1. To minimize the amount and extent of incidental take from construction activities within Clear Creek, Dry Fork Clear Creek, Phipps Creek, and Squaw Creek, measures shall be taken to

limit the duration and extent of in-water work, and to time such work when the impacts to MCR steelhead are minimized.

2. To minimize the amount and extent of incidental take from construction activities in or near the creeks, effective erosion and pollution control measures shall be developed and implemented throughout the area of disturbance. The measures shall minimize the movement of soils and sediment both into and within the river, and will stabilize bare soil over both the short term and long term.
3. To minimize the amount and extent of take from loss of in-stream habitat and to minimize impacts to critical habitat, measures shall be taken to minimize impacts to riparian and in-stream habitat, or where impacts are unavoidable, to replace or restore lost riparian and in-stream function.
4. To ensure effectiveness of implementation of the reasonable and prudent measures, all erosion control measures shall be monitored and evaluated both during and following construction and meet criteria as described below in the terms and conditions.

### **C. Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the ESA, FHWA/ODOT must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. Implementation of the terms and conditions within this Opinion will further reduce the risk of impacts to fish and the Middle Fork John Day River. These terms and conditions are non-discretionary.

1. In-water work:
  - a. Passage shall be provided for both adult and juvenile forms of all salmonid species throughout the construction period. The FHWA/ODOT designs will ensure passage of fishes as per ORS 498.268 and ORS 509.605 (Oregon's fish passage guidance).
  - b. All work within the active channel of all anadromous fish-bearing systems, or in systems which could potentially contribute sediment or toxicants to downstream fish-bearing systems, will be completed within ODFW's in-water work period (July 15<sup>th</sup> to August 15<sup>th</sup>). An extension to the end of August for Phipps Creek has been approved so that work can be conducted when there is no surface flow. A variance from the in-water work period was also obtained to start work at Clear Creek, Dry Fork Clear Creek and Squaw Creek two weeks early. Staging plans for temporary waterway diversions will be submitted and approved by ODOT Environmental Staff prior to proceeding with associated in-water activities. Any additional extensions of the in-water work period will first be approved by, and coordinated with, NMFS.
  - c. All in-water work will be done within a cofferdam (made out of sandbags, sheet pilings,



inflatable bags, etc.), or similar structure, to minimize the potential for sediment entrainment.

- d. De-watering of the culverts will be done through one of two methods. Both methods involve the use of sandbags and plastic sheeting to create a temporary dam above each culvert. A secondary dam will likely be used between the work area and the primary dam to contain water that seeps under the primary dam. A pump will be used to transfer any water in this area upstream of the primary dam or, if the water is turbid, to a settling pond. Any fish present in the area to be de-watered will be moved above the dam by ODFW biologists. Fish will be captured either by seining or electrofishing and moved above the de-watered area.
  - i. The first method of de-watering requires the installation of a metal culvert pipe in the dam. Stream water is stopped by the dam, flow passes through the metal culvert, and is released downstream of the work area. Fish passage is maintained through the metal pipe.
  - ii. The second method involves placing a pump in the area behind the primary dam and pumping the water through a flexible hose that is placed over the roadway or in a groove in the asphalt roadway. The hose will be protected from being crushed by vehicles. The pump will be screened with a 3/32 inch mesh screen to prevent juvenile fish from being drawn into the pump. In addition, a geotextile barrier will be placed at some distance from the pumping area to prevent fish from approaching the pump and screen.
- e. Alteration or disturbance of stream banks and existing riparian vegetation will be minimized. Where bank work is necessary, bank protection material (riprap and/ or plantings) shall be placed to maintain normal waterway configuration.
- f. During ODOT project design, ODOT will work to minimize the amount of riprap used. Where riprap is necessary, only clean, non-erodible, upland angular rock of sufficient size for long-term armoring will be employed. In areas with riprap installation, large riprap (class 350 metric minimum) will be used preferentially within the 2-year floodplain of systems, where this riprap would come into contact with actively flowing water, and where using larger riprap would not constrict the size of the active channel (larger rock sizes create larger interstitial spaces for juvenile salmonids). Placement will be performed during the low water period, and will be done "in the dry" as much as possible.
- g. During excavation, native streambed materials will be stockpiled out of the two-year floodplain for later use. Once riprap has been placed in the trench, the native materials will be placed overtop of the riprap.

## 2. Erosion and Pollution Control

An Erosion Control Plan (ECP) will be prepared by ODOT or the contractor, and implemented by the Contractor. The ECP will outline how and to what specifications various erosion control devices will be installed to meet water quality standards, and will provide a specific inspection protocol and time response. Erosion control measures shall be sufficient to ensure compliance with applicable water quality standards and this Opinion. The ECP shall be maintained on site and shall be available for review upon request.

- a. Erosion Control measures shall include (but not be limited to) the following:
  - i. Sediment containment devices will include Sedimats for use between the water diversion dams to absorb sediments from any water that leaks through the upper dam. Sedimats will also be placed in the flowing channel immediately below the work site.
  - ii. The contractor will have the following on hand: 50 weed-free straw bales, 150 feet of unsupported silt fence, and 25 biobags. The purpose is to address unexpected rain events, or failure of other measures to contain sediment.
  - iii. Temporary plastic sheeting for immediate protection of unvegetated areas (where seeding/ mulching are not appropriate), in accordance with ODOT's standard specifications.
  - iv. Erosion control blankets or heavy duty matting (e.g., jute) may be used on steep unstable slopes in conjunction with seeding or prior to seeding.
  - v. Sills or barriers may be placed in drainage ditches along cut slopes and on steep grades to trap sediment and prevent scouring of the ditches. The barriers will be constructed from rock and straw bales.
  - vi. Biobags, weed-free straw bales and loose straw may be used for temporary erosion control. Temporary erosion and sediment controls will be used on all exposed slopes during any hiatus in work on exposed slopes.
- b. Effective erosion control measures shall be in-place at all times during the contract. Construction within the 5-year floodplain will not begin until all temporary erosion controls (e.g., straw bales, silt fences) are in-place, downslope of project activities within the riparian area. Erosion control structures will be maintained throughout the life of the contract.
- c. All temporarily-exposed areas will be seeded and mulched. Erosion control seeding and mulching, and placement of erosion control blankets and mats (if applicable) will be completed on all areas of bare soil within 7 days of exposure within 150 feet of waterways, wetlands or other sensitive areas, and in all areas during the wet season

(after October 1). All other areas will be stabilized within 14 days of exposure. Efforts will be made to cover exposed areas as soon as possible after exposure.

- d. All erosion control devices will be inspected during construction to ensure that they are working adequately. Erosion control devices will be inspected daily during the rainy season, weekly during the dry season, monthly on inactive sites. Work crews will be mobilized to make immediate repairs to the erosion controls, or to install erosion controls during working and off-hours. Should a control measure not function effectively, the control measure will be immediately repaired or replaced. Additional erosion controls will be installed as necessary.
- e. If soil erosion and sediment resulting from construction activities is not effectively controlled, the engineer will limit the amount of disturbed area to that which can be adequately controlled.
- f. Sediment will be removed from sediment controls once it has reached 1/3 of the exposed height of the control. Whenever straw bales are used, they will be staked and dug into the ground 12 cm. Catch basins shall be maintained so that no more than 15 cm of sediment depth accumulates within traps or sumps.
- g. Where feasible, sediment-laden water created by construction activity shall be filtered before it leaves the right-of-way or enters an aquatic resource area. Silt fences or other detention methods will be installed as close as possible to culvert outlets to reduce the amount of sediment entering aquatic systems.
- h. A supply of erosion control materials (e.g., straw bales and clean straw mulch) will be kept on hand to cover small sites that may become bare and to respond to sediment emergencies.
- i. All equipment that is used for in-stream work will be cleaned prior to entering the two-year floodplain. External oil and grease will be removed, along with dirt and mud. Untreated wash and rinse water will not be discharged into streams and rivers without adequate treatment.
- j. On cut slopes steeper than 1:2, a tackified seed mulch will be used so that the seed does not wash away before germination and rooting occurs. In steep locations, a hydro-mulch will be applied at 1.5 times the normal rate.
- k. Material removed during excavation shall only be placed in locations where it cannot enter sensitive aquatic habitat. Conservation of topsoil (removal, storage and reuse) will be employed.

- l. Measures will be taken to prevent construction debris from falling into any aquatic habitat. Any material that falls into a stream during construction operations will be removed in a manner that has a minimum impact on the streambed and water quality.
- m. Project actions will follow all provisions of the Clean Water Act (40 CFR Subchapter D) and DEQ's provisions for maintenance of water quality standards not to be exceeded within the John Day River (OAR Chapter 340, Division 41). Toxic substances shall not be introduced above natural background levels in waters of the State in amounts which may be harmful to aquatic life. Any turbidity caused by this project shall not exceed DEQ water quality standards.
- n. The Contractor will develop an adequate, site-specific Spill Prevention and Countermeasure or Pollution Control Plan (PCP), and is responsible for containment and removal of any toxicants released. The Contractor will be monitored by the ODOT Engineer to ensure compliance with this PCP. The PCP shall include the following:
  - i. A site plan and narrative describing the methods of erosion/sediment control to be used to prevent erosion and sediment for contractor's operations related to disposal sites, borrow pit operations, haul roads, equipment storage sites, fueling operations and staging areas.
  - ii. Methods for confining and removing and disposing of excess concrete, cement and other mortars. Also identify measures for equipment washout facilities.
  - iii. A spill containment and control plan that includes: notification procedures; specific containment and clean up measures which will be available on site; proposed methods for disposal of spilled materials; and employee training for spill containment.
  - iv. Measures to be used to reduce and recycle hazardous and non-hazardous waste generated from the project, including the following: the types of materials, estimated quantity, storage methods, and disposal methods.
  - v. The person identified as the Erosion and Pollutant Control Manager (EPCM) shall also be responsible for the management of the contractor's PCP.
- o. Areas for fuel storage, refueling and servicing of construction equipment and vehicles will be located at least 300 feet away from the 2-year floodplain of any waterbody. Overnight storage of wheeled vehicles must occur at least 300 feet away from the 2-year floodplain of any waterbody. Overnight storage of non-wheeled vehicles (e.g. crane, pile driver) is allowed within the 2-year floodplain during the in-water work window; however, to minimize the risk of fuel reaching the water, refueling of these vehicles must not occur after 1 pm (so the vehicles do not have full tanks overnight).

- p. Hazmat booms will be installed in all aquatic systems where:
  - i. Significant in-water work will occur, or where significant work occurs within the 5-year floodplain of the system, or where sediment/toxicant spills are possible.
  - ii. The aquatic system can support a boom setup (i.e. the creek is large enough, low-moderate gradient ).
- q. Hazmat booms will be maintained on-site in locations where there is potential for a toxic spill into aquatic systems. "Diapering" of vehicles to catch any toxicants (oils, greases, brake fluid) will be mandated when the vehicles have any potential to contribute toxic materials into aquatic systems.
- r. No surface application of nitrogen fertilizer will be used within 50 feet of any aquatic resource.

### 3. Riparian Habitat Protection Measures

- a. Boundaries of the vegetation clearing limits will be flagged by the project inspector. Ground will not be disturbed beyond the flagged boundary.
- b. Alteration of native vegetation will be minimized. Where possible, native vegetation will be clipped by hand so that roots are left intact. This will reduce erosion while still allowing room to work. No protection will be made of invasive exotic species (e.g. Himalayan blackberry), although no chemical treatment of invasive species will be used.
- c. Riparian understory and overstory vegetation removed will have a replacement rate of 1.5:1, at a minimum. Replacement will occur within the project vicinity where possible and within the Middle Fork John Day watershed at a minimum. Any disturbed riparian area must be planted with trees and shrubs, at a minimum.
- d. The FHWA/ODOT will construct fences along the highway that will exclude livestock from the highway as well as from newly planted replacement vegetation.

### Monitoring

- a. Erosion control measures as described above in 2(d) shall be monitored. Erosion control and pollution control measures will be monitored daily at Clear Creek, Dry Fork Clear Creek, and Squaw Creek to ensure adequate water quality. The contractor will provide the ODOT Project Manager a digital picture of each work site

on a daily basis.

- b. All significant riparian replant areas will be monitored to insure the following:
  - i. Finished grade slopes and elevations will perform the appropriate role for which they were designed.
  - ii. Plantings are performing correctly and have an adequate success rate (success rate necessary depends on the planting density but the goal is to have a functional riparian vegetation community).
- c. Failed plantings and structures will be replaced, if replacement would potentially succeed. If not, plantings at other appropriate locations will be done.
- d. A plant establishment period (3 year minimum) will be required for all riparian mitigation plantings. In extremely unstable or unproductive areas, ODOT may be released from the establishment period and develop a larger replanting area to compensate for this.
- e. By December 31 of the year following construction, FHWA/ODOT shall submit to NMFS (Oregon Branch) a monitoring report with the results of the monitoring required in terms and conditions (4(a) to 4(c) above).